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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/886,625	07/01/97	SHENOY	N SNSY-A1996-0

LM02/1008

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EXAMINER	
GARBOWSKI, L	
ART UNIT	**PAPER NUMBER**
2763	5

DATE MAILED: 10/08/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/886,625	SHENOY et al.
Examiner	**Group Art Unit**
Jaworski	2763

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 9-7-99.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-17 is/are pending in the application.

Of the above claim(s) 15-17 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-14 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of References Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. This office action is in response to the communication filed 9/7/99.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. As per claims 1 and 10, taking claim 1 as exemplary, step "f)" recites "when a new partition is created" [line 12]. However, the established claim language does not provide adequate antecedent basis for "a new partition" or particularly "when [it] is created". Step "e)" merely proclaims "partitioning ... into a plurality of partitions" [line 11], and it is not clear from this step how the features of the following step are intended to be interpreted. Therefore, the claim is incomplete, vague and indefinite.

4. Furthermore, as per claim 10, the antecedent basis order regarding "partitions" [line 10] is confusing.

5. The remaining claims, though not specifically mentioned, are rejected for incorporating the errors of their respective base claims by dependency.

6. The following rejections are based on the examiner's best interpretation of the claims in view of the issues raised above.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by .

9. As per claim 10, Hathaway et al. disclose a computer system programmed to include a rough placement logic for placing cells [see the entire document, at least as cited] comprising means for assigning locations to each of the cells of the netlist [column 2, lines 52-53]; means for changing the netlist in response to cell location information [column 2, lines 17-19], wherein an area is allowed to be scaled in response to changes made to the netlist [column 5, lines 51-65]; means for changing sizes, wherein the changes result in corresponding changes to the cells [column 3, lines 17-28, 45-64]; means for partitioning the cells into a plurality of separate partitions, wherein cells are placed at different locations [column 2, lines 39-45; column 4, lines 13-27]; and means for determining whether the partitions have converged [column 2, lines 45-49]. As per claim 12, Hathaway et al. further disclose wherein a change to the netlist includes sizing a gate up or down [column 2, lines 17-19]. As per claim 13, Hathaway et al. further disclose wherein a change to the netlist includes adding or deleting one or more gates [column 2, lines 17-19]. As per claim 14, Hathaway et al. further disclose wherein convergence is achieved when each partition has a number of cells less than a pre-determined value [column 7, lines 30-35].

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hathaway et al. [U.S. Patent #5,757,657] in view of Cheng [U.S. Patent #5,847,965], or Jones et al. [U.S. Patent #5,629,860], or Modarres et al. [U.S. Patent #4,918,614].

12. As per claim 1, Hathaway et al. teach a computer controlled and implemented method for placing cells [see the entire document, at least as cited] comprising a) generating a netlist through a synthesis process [column 2, lines 35-37]; b) executing a cell separation process according to the netlist [column 2, lines 52-53]; c) changing the netlist [column 2, lines 17-19]; d) modifying spacings of the cells responsive to changes made to the netlist [column 3, lines 17-28, 45-64]; e) partitioning the cells into a plurality of partitions [column 2, lines 39-45]; f) changing placements of the cells [column 4, lines 13-27]; and g) determining whether the partitions have converged [column 2, lines 45-49]. However, Hathaway et al. do not teach wherein steps c-f are repeated if convergence is not yet achieved. Yet, Hathaway et al. do suggest that "steps of the inventive method are repeated until no more changes are required" [column 1, lines 66-67]. Iteratively performing steps of a method is a well known practice in the art for optimizing a design. The following references each support this assertion: Cheng [column 3, lines 25-26; column 4, lines 47-50]; Jones et al. [column 9, lines 21-28]; Modarres et al. [column 20, lines 43-48]. Therefore, considering the high level of skill in the art, a person of ordinary

skill in the art at the time of the invention would have found it obvious to repeat steps c-f if convergence is not yet achieved because the optimum design is attained. As per claim 2, Hathaway et al. further teach changing size in response to changes made to the netlist [column 3, lines 17-28; column 5, lines 51-65; column 7, lines 27-35]. As per claim 3, Hathaway et al. further teach inputting HDL, user constraints, and technology data into the synthesis process [column 1, lines 13-17; see also applicant's specification at page 2, line 24 through page 3, line 1, page 7, lines 15-22]. As per claim 5, Hathaway et al. further teach wherein the cell separation process assigns an (x,y) location to each of the cells of the netlist [column 2, lines 52-53]. As per claim 6, Hathaway et al. further teach wherein the netlist is changed based on cell location information [column 2, lines 17-19, 50-54; column 3, lines 44-50]. As per claim 7, Hathaway et al. further teach wherein a change to the netlist includes sizing a gate up or down [column 2, lines 17-19]. As per claim 8, Hathaway et al. further teach wherein a change to the netlist includes adding or deleting one or more gates [column 2, lines 17-19]. As per claim 9, Hathaway et al. further teach wherein convergence is achieved when each partition has a number of cells less than a pre-determined value [column 7, lines 30-35].

13. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hathaway et al. in view of Cheng [U.S. Patent #5,847,965], or Jones et al. [U.S. Patent #5,629,860], or Modarres et al. [U.S. Patent #4,918,614], and further in view of applicant's specification.

14. The above combinations teach the features from which the claims depend, but do not teach a mapped netlist. The specification teaches that "any of the synthesis tools commercially available ... can be used to generate the mapped netlist" [page 7, lines 16-18]. Therefore, considering the high level of ordinary skill in the art, a person of ordinary skill in the art at the time of the invention would have found it obvious to modify the Hathaway et al. teaching to include a mapped netlist because the ready availability of this feature facilitates and uniforms the design placement process.

REMARKS

15. Claims 15-17 have been withdrawn from consideration because the amendments to claim 15 are completely inaccurate with respect to the previous claim language. For example, the original claim 15 recites: "c) changing the netlist in response to cell location information;" [line 6], yet the amended claim 15 recites: "c) changing the netlist;" [line 7]. The proposed amendments to claim 15 are improper, therefore, the once amended claim 15 filed 09/07/99 has not been entered. Furthermore, considering the similar claim language employed, claim 15 would have been rejected similarly as the above rejections outline, however, such has not been provided because it is not clear what applicant has intended.

16. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

18. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Marie Garbowski whose telephone number is (703) 305-9753.

20. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

LMG

Leigh Marie Garbowski
October 1, 1999

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER